

SEQUENCE LISTING

<110> DONG, ZHENG XIN
COY, DAVID H.

<120> GLP-1 ANALOGUES

<130> 00537/187001

<140> 09/206,833
<141> 1998-12-07

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<170> PatentIn Ver. 2.0

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Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
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Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
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Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
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<213> Homo sapiens

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Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
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<221> MOD_RES

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<223> N-epsilon-alkanoyl-lysine

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His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Xaa Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
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Gln Ala Ala Xaa Glu Phe Ile Ala Trp Leu Val Xaa Gly Arg Gly
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1 5 10 15

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1 | 5 10 15

Gln Ala Ala Arg Glu Phe Ile Ala Trp Leu Val Arg Gly Xaa
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Gln Ala Ala Arg Glu Phe Ile Ala Trp Leu Val Arg Gly Xaa Gly
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1 5 10 15

Gln Ala Ala Arg Glu Phe Ile Ala Trp Leu Val Arg Gly Xaa Gly
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<213> Homo sapiens

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Gln Ala Ala Arg Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
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<213> Homo sapiens

<400> 26

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly

1 5 10 15

Gln Ala Ala Arg Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
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Gln Ala Ala Arg Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
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Gln Ala Ala Arg Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
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<400> 29
His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Arg Gly Arg
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<400> 30
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1 5 10 15
Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Arg Gly Arg Gly
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1 5 10 15
Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Arg Gly Arg Gly
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<400> 33

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
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Gln' Ala Ala Arg Glu Phe Ile Ala Trp Leu Val Arg Gly Arg
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<213> Homo sapiens

<400> 34

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
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Gln Ala Ala Arg Glu Phe Ile Ala Trp Leu Val Arg Gly Arg Gly
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Gln Ala Ala Arg Glu Phe Ile Ala Trp Leu Val Arg Gly Arg
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1 5 10 15

Gln Ala Ala Arg Glu Phe Ile Ala Trp Leu Val Arg Gly Arg Gly
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<400> 37
His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
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Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Lys
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Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Lys Gly
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1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Lys Gly
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<213> Homo sapiens

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His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Arg Glu Phe Ile Ala Trp Leu Val Lys Gly Lys
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<210> 42

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<212> PRT

<213> Homo sapiens

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His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Arg Glu Phe Ile Ala Trp Leu Val Lys Gly Lys Gly
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<213> Homo sapiens

<400> 45

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Arg Gly Lys
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<212> PRT

<213> Homo sapiens

<400> 46

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Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Arg Gly Lys Gly
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His	Ala	Glu	Gly	Thr	Phe	Thr	Ser	Asp	Val	Ser	Ser	Tyr	Leu	Glu	Gly
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Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Arg Gly Lys

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Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Arg Gly Lys Gly
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<210> 49
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<212> PRT
<213> Homo sapiens

<400> 49
His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Arg Glu Phe Ile Ala Trp Leu Val Arg Gly Lys
20 25 30

<210> 50
<211> 31
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<213> Homo sapiens

<400> 50
His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Arg Glu Phe Ile Ala Trp Leu Val Arg Gly Lys Gly
20 25 30

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1 5 10 15

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<212> PRT

<213> Homo sapiens

<400> 53

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Asp Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
20 25 30

<210> 54

<211> 31

<212> PRT

<213> Homo sapiens

<400> 54

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Asp Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
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Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
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Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
20 25 30

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1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
20 25 30

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<222> (2)
<223> alpha-aminoisobutyric acid

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1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
20 25 30

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<220>
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1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
20 25 30

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<220>
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Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
20 25 30

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<213> Homo sapiens

<400> 61
His Ala Asp Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 | 5 10 15
Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
20 25 30

<210> 62
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<212> PRT
<213> Homo sapiens

<400> 62
His Ala Asp Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15
Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
20 25 30

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1 5 10 15
Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
20 25 30

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<400> 64
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1 5 10 15
Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
20 25 30

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<211> 30
<212> PRT
<213> Homo sapiens

<400> 65
Tyr Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15
Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
20 25 30

<210> 66
<211> 31
<212> PRT
<213> Homo sapiens

<400> 66
Tyr Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15
Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
20 25 30

<210> 67
<211> 30
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Mutagen

<220>
<223> this sequence has an amidated c-terminus

<400> 67

Tyr Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
20 25 30

<210> 68
<211> 31
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Mutagen

<220>
<223> this sequence has an amidated c-terminus

<400> 68
Tyr Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
20 25 30

<210> 69
<211> 30
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Mutagen

<220>
<221> MOD_RES
<222> (1)
<223> N-acyl-histidine

<400> 69
Xaa Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
20 25 30

<210> 70
<211> 31
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Mutagen

<220>
<221> MOD_RES

<222> (1)
<223> N-acyl-histidine

<400> 70
Xaa Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
20 25 30

<210> 71
<211> 30
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Mutagen

<220>
<221> MOD_RES
<222> (1)
<223> N-acyl-histidine

<220>
<223> this sequence has an amidated c-terminus

<400> 71
Xaa Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
20 25 30

<210> 72
<211> 31
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Mutagen

<220>
<221> MOD_RES
<222> (1)
<223> N-acyl-histidine

<220>
<223> this sequence has an amidated c-terminus

<400> 72
Xaa Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
20 25 30

<210> 73
<211> 30
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Mutagen

<220>
<221> MOD_RES
<222> (1)
<223> N-alkyl-histidine

<400> 73
Xaa Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15
Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
20 25 30

<210> 74
<211> 31
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Mutagen

<220>
<221> MOD_RES
<222> (1)
<223> N-alkyl-histidine

<400> 74
Xaa Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15
Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
20 25 30

<210> 75
<211> 30
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Mutagen

<220>
<221> MOD_RES
<222> (1)
<223> N-alkyl-histidine

<220>
<223> this sequence has an amidated c-terminus

<400> 75
Xaa Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15
Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
20 25 30

<210> 76
<211> 31
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Mutagen

<220>
<221> MOD_RES
<222> (1)
<223> N-alkyl-histidine

<220>
<223> this sequence has an amidated c-terminus

<400> 76
Xaa Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15
Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
20 25 30

<210> 77
<211> 29
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Mutagen

<220>
<221> MOD_RES
<222> (1)
<223> N-methyl-alanine

<400> 77
Xaa Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly Gln
1 5 10 15
Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
20 25

<210> 78

<211> 30
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Mutagen

<220>
<221> MOD_RES
<222> (1)
<223> N-methyl-alanine

<400> 78
Xaa Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly Gln
1 5 10 15
Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
20 25 30

<210> 79
<211> 30
<212> PRT
<213> Homo sapiens

<400> 79
His Ala Glu Gly Thr Phe Thr Ser Glu Val Ser Ser Tyr Leu Glu Gly
1 5 10 15
Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
20 25 30

<210> 80
<211> 31
<212> PRT
<213> Homo sapiens

<400> 80
His Ala Glu Gly Thr Phe Thr Ser Glu Val Ser Ser Tyr Leu Glu Gly
1 5 10 15
Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg Gly
20 25 30

<210> 81
<211> 30
<212> PRT
<213> Homo sapiens

<400> 81
His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15
Gln Ala Ala Lys Glu Phe Ile Ala Phe Leu Val Lys Gly Arg
20 25 30

<210> 82
<211> 31
<212> PRT
<213> Homo sapiens

<400> 82
His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15
Gln Ala Ala Lys Glu Phe Ile Ala Phe Leu Val Lys Gly Arg Gly
20 25 30

<210> 83
<211> 29
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Mutagen

<220>
<221> MOD_RES
<222> (13)
<223> beta-(3-pyridinyl)alanine

<220>
<221> MOD_RES
<222> (25)
<223> beta-(3-pyridinyl)alanine

<220>
<223> this sequence has an amidated c-terminus

<400> 83
His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ala Xaa Leu Glu Gly
1 5 10 15
Ala Ala Ala Lys Ala Phe Ile Ala Xaa Leu Val Lys Gly
20 25

<210> 84
<211> 29
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Mutagen

<220>
<221> MOD_RES
<222> (13)
<223> beta-(3-pyridinyl)alanine

<220>
<221> MOD_RES
<222> (25)
<223> beta-(3-pyridinyl)alanine

<220>
<223> this sequence has an amidated c-terminus

<400> 84
His Ala Glu Gly Thr Phe Thr Ser Asp Ala Ser Ser Xaa Leu Glu Gly
1 5 10 15

Ala Ala Ala Lys Ala Phe Ile Ala Xaa Leu Val Lys Gly
20 25

<210> 85
<211> 29
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Mutagen

<220>
<221> MOD_RES
<222> (13)
<223> beta-(3-pyridinyl)alanine

<220>
<221> MOD_RES
<222> (25)
<223> beta-(3-pyridinyl)alanine

<220>
<223> this sequence has an amidated c-terminus

<400> 85
His Ala Glu Gly Thr Phe Thr Ala Asp Val Ser Ser Xaa Leu Glu Gly
1 5 10 15

Ala Ala Ala Lys Ala Phe Ile Ala Xaa Leu Val Lys Gly
20 25

<210> 86
<211> 29
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Mutagen

<220>
<221> MOD_RES
<222> (13)
<223> beta-(3-pyridinyl)alanine

<220>
<221> MOD_RES
<222> (25)
<223> beta-(3-pyridinyl)alanine

<220>
<223> this sequence has an amidated c-terminus

<400> 86
His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Xaa Leu Glu Ala
1 5 10 15

Ala Ala Ala Lys Ala Phe Ile Ala Xaa Leu Val Lys Gly
20 25

<210> 87
<211> 30
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Mutagen

<220>
<221> MOD_RES
<222> (1)
<223> 3-(p-hydroxyphenyl)propionic acid

<220>
<223> this sequence has an amidated c-terminus

<400> 87
Xaa Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
20 25 30

<210> 88
<211> 29
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Mutagen

<220>
<221> MOD_RES
<222> (13)
<223> beta-(3-pyridinyl)alanine

<220>
<221> MOD_RES
<222> (25)

<223> beta-(3-pyridinyl)alanine

<220>

<223> this sequence has an amidated c-terminus

<400> 88
His Ala Glu Gly Thr Phe Thr Ser Ala Val Ser Ser Xaa Leu Glu Gly
1 5 10 15

Ala Ala Ala Lys Ala Phe Ile Ala Xaa Leu Val Lys Gly
20 25

<210> 89
<211> 29
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Mutagen

<220>

<221> MOD_RES
<222> (13)

<223> beta-(3-pyridinyl)alanine

<220>

<221> MOD_RES
<222> (25)

<223> beta-(3-pyridinyl)alanine

<220>

<223> this sequence has an amidated c-terminus

<400> 89
His Ala Glu Gly Thr Phe Thr Ser Asp Val Ala Ser Xaa Leu Glu Gly
1 5 10 15

Ala Ala Ala Lys Ala Phe Ile Ala Xaa Leu Val Lys Gly
20 25

<210> 90
<211> 28
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Mutagen

<220>

<221> MOD_RES
<222> (13)

<223> beta-(3-pyridinyl)alanine

<220>

<221> MOD_RES

<222> (25)
<223> beta-(3-pyridinyl)alanine

<220>
<221> MOD_RES
<222> (28)
<223> gamma-aminobutyric acid

<220>
<223> this sequence has an amidated c-terminus

<400> 90
His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Xaa Leu Glu Ala
1 5 10 15

Ala Ala Ala Lys Ala Phe Ile Ala Xaa Leu Val Xaa
20 25

<210> 91
<211> 28
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Mutagen

<220>
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<223> beta-(3-pyridinyl)alanine

<220>
<221> MOD_RES
<222> (25)
<223> beta-(3-pyridinyl)alanine

<220>
<221> MOD_RES
<222> (28)
<223> gamma-aminobutyric acid

<220>
<223> this sequence has an amidated c-terminus

<400> 91
His Ala Glu Gly Thr Phe Thr Ser Ala Val Ser Ser Xaa Leu Glu Ala
1 5 10 15

Ala Ala Ala Lys Ala Phe Ile Ala Xaa Leu Val Xaa
20 25

<210> 92
<211> 28
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Mutagen

<220>
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<223> beta-(3-pyridinyl)alanine

<220>
<221> MOD_RES
<222> (25)
<223> beta-(3-pyridinyl)alanine

<220>
<221> MOD_RES
<222> (28)
<223> gamma-aminobutyric acid

<220>
<223> this sequence has an amidated c-terminus

<400> 92
His Ala Glu Gly Thr Phe Thr Ser Asp Val Ala Ser Xaa Leu Glu Ala
1 5 10 15

Ala Ala Ala Lys Ala Phe Ile Ala Xaa Leu Val Xaa
20 25

<210> 93
<211> 28
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Mutagen

<220>
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<223> beta-(3-pyridinyl)alanine

<220>
<221> MOD_RES
<222> (25)
<223> beta-(3-pyridinyl)alanine

<220>
<221> MOD_RES
<222> (28)
<223> gamma-aminobutyric acid

<220>
<223> this sequence has an amidated c-terminus

<400> 93

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ala Xaa Leu Glu Ala
1 5 10 15

Ala Ala Ala Lys Ala Phe Ile Ala Xaa Leu Val Xaa
20 25

<210> 94
<211> 28
<212> PRT
<213> Artificial Sequence

<220>
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<220>
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<220>
<221> MOD_RES
<222> (25)
<223> beta-(3-pyridinyl)alanine

<220>
<221> MOD_RES
<222> (28)
<223> gamma-aminobutyric acid

<220>
<223> this sequence has an amidated c-terminus

<400> 94
His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Xaa Leu Ala Ala
1 5 10 15

Ala Ala Ala Lys Ala Phe Ile Ala Xaa Leu Val Xaa
20 25

<210> 95
<211> 28
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Mutagen

<220>
<221> MOD_RES
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<223> beta-(3-pyridinyl)alanine

<220>
<221> MOD_RES
<222> (25)

<223> beta-(3-pyridinyl)alanine

<220>

<221> MOD_RES

<222> (28)

<223> gamma-aminobutyric acid

<220>

<223> this sequence has an amidated c-terminus

<400> 95

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Xaa Leu Glu Ala
1 5 10 15

Ala Ala Ala Ala Ala Phe Ile Ala Xaa Leu Val Xaa
20 25

<210> 96

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Mutagen

<220>

<221> MOD_RES

<222> (13)

<223> beta-(3-pyridinyl)alanine

<220>

<221> MOD_RES

<222> (25)

<223> beta-(3-pyridinyl)alanine

<220>

<221> MOD_RES

<222> (28)

<223> gamma-aminobutyric acid

<220>

<223> this sequence has an amidated c-terminus

<400> 96

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Xaa Leu Glu Ala
1 5 10 15

Ala Ala Ala Lys Ala Phe Ile Ala Xaa Ala Val Xaa
20 25

<210> 97

<211> 27

<212> PRT

<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Mutagen

<220>
<221> MOD_RES
<222> (13)
<223> beta-(3-pyridinyl)alanine

<220>
<221> MOD_RES
<222> (25)
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<220>
<221> MOD_RES
<222> (27)
<223> gamma-aminobutyric acid

<220>
<223> this sequence has an amidated c-terminus

<400> 97
His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Xaa Leu Glu Ala
1 5 10 15

Ala Ala Ala Ala Ala Phe Ile Ala Xaa Leu Xaa
20 25

<210> 98
<211> 27
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Mutagen

<220>
<221> MOD_RES
<222> (13)
<223> beta-(3-pyridinyl)alanine

<220>
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<223> beta-(3-pyridinyl)alanine

<220>
<221> MOD_RES
<222> (27)
<223> gamma-aminobutyric acid

<220>
<223> this sequence has an amidated c-terminus

<400> 98
His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Xaa Leu Glu Ala

1 5 10 15

Ala Ala Ala Lys Ala Phe Ile Ala Ala Leu Xaa
 20 25

<210> 99
<211> 27
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Mutagen

<220>
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<222> (13)
<223> beta-(3-pyridinyl)alanine

<220>
<221> MOD_RES
<222> (25)
<223> beta-(3-pyridinyl)alanine

<220>
<221> MOD_RES
<222> (27)
<223> gamma-aminobutyric acid

<220>
<223> this sequence has an amidated c-terminus

<400> 99
His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Xaa Leu Glu Ala
 1 5 10 15

Ala Ala Ala Lys Ala Ala Ile Ala Xaa Leu Xaa
 20 25

<210> 100
<211> 27
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Mutagen

<220>
<221> MOD_RES
<222> (13)
<223> beta-(3-pyridinyl)alanine

<220>
<221> MOD_RES
<222> (25)
<223> beta-(3-pyridinyl)alanine

<220>
<221> MOD_RES
<222> (27)
<223> gamma-aminobutyric acid

<220>
<223> this sequence has an amidated c-terminus

<400> 100
His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Xaa Leu Glu Ala
1 5 10 15

Ala Ala Ala Lys Ala Phe Ala Ala Xaa Leu Xaa
20 25

<210> 101
<211> 27
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Mutagen

<220>
<221> MOD_RES
<222> (13)
<223> beta-(3-pyridinyl)alanine

<220>
<221> MOD_RES
<222> (25)
<223> beta-(3-pyridinyl)alanine

<220>
<221> MOD_RES
<222> (27)
<223> gamma-aminobutyric acid

<220>
<223> this sequence has an amidated c-terminus

<400> 101
His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Xaa Leu Glu Gly
1 5 10 15

Ala Ala Ala Lys Ala Phe Ile Ala Xaa Leu Xaa
20 25

<210> 102
<211> 27
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Mutagen

<220>
<221> MOD_RES
<222> (13)
<223> beta-(3-pyridinyl)alanine

<220>
<221> MOD_RES
<222> (25)
<223> beta-(3-pyridinyl)alanine

<220>
<221> MOD_RES
<222> (27)
<223> gamma-aminobutyric acid

<220>
<223> this sequence has an amidated c-terminus

↓
<400> 102
His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Xaa Ala Glu Ala
1 5 10 15

Ala Ala Ala Lys Ala Phe Ile Ala Xaa Leu Xaa
20 25.

<210> 103
<211> 27
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Mutagen

<220>
<221> MOD_RES
<222> (13)
<223> beta-(3-pyridinyl)alanine

<220>
<221> MOD_RES
<222> (25)
<223> beta-(3-pyridinyl)alanine

<220>
<221> MOD_RES
<222> (27)
<223> gamma-aminobutyric acid

<220>
<223> this sequence has an amidated c-terminus

<400> 103
His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Xaa Leu Glu Ala
1 5 10 15

Ala Ala Ala Lys Ala Phe Ile Ala Xaa Leu Xaa
20 25

<210> 104

<211> 27

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Mutagen

<220>

<221> MOD_RES

<222> (13)

<223> beta-(3-pyridinyl)alanine

<220>

<221> MOD_RES

<222> (25)

<223> beta-(3-pyridinyl)alanine

<220>

<221> MOD_RES

<222> (27)

<223> gamma-aminobutyric acid

<220>

<223> this sequence has an amidated c-terminus

<400> 104

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ala Ser Xaa Leu Glu Ala
1 5 10 15

Ala Ala Ala Lys Ala Phe Ile Ala Xaa Leu Xaa
20 25

<210> 105

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Mutagen

<220>

<221> MOD_RES

<222> (13)

<223> beta-(3-pyridinyl)alanine

<220>

<221> MOD_RES

<222> (20)

<223> beta-(3-pyridinyl)alanine

<220>
<221> MOD_RES
<222> (25)
<223> beta-(3-pyridinyl)alanine

<220>
<223> this sequence has an amidated c-terminus

<400> 105
His Ala Glu Gly Thr Phe Thr Ser Asp Val Ala Ser Xaa Leu Glu Gly
1 5 10 15

Ala Ala Ala Xaa Ala Phe Ile Ala Xaa Leu Val Lys
20 25

<210> 106
<211> 28
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Mutagen

<220>
<221> MOD_RES
<222> (13)
<223> beta-(3-pyridinyl)alanine

<220>
<221> MOD_RES
<222> (25)
<223> beta-(3-pyridinyl)alanine

<220>
<223> this sequence has an amidated c-terminus

<400> 106
His Ala Glu Gly Thr Phe Thr Ser Asp Val Ala Ser Xaa Leu Glu Gly
1 5 10 15

Ala Ala Ala Lys Ala Phe Ile Ala Xaa Leu Val Lys
20 25

<210> 107
<211> 28
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Mutagen

<220>
<221> MOD_RES
<222> (2)
<223> alpha-aminoisobutyric acid

<220>
<221> MOD_RES
<222> (13)
<223> beta-(3-pyridinyl)alanine

<220>
<221> MOD_RES
<222> (25)
<223> beta-(3-pyridinyl)alanine

<220>
<221> MOD_RES
<222> (28)
<223> gamma-aminobutyric acid

<220>
<223> this sequence has an amidated c-terminus

<400> 107
His Xaa Glu Gly Thr Phe Thr Ser Asp Val Ala Ser Xaa Leu Glu Gly
1 5 10 15

Ala Ala Ala Lys Ala Phe Ile Ala Xaa Leu Val Xaa
20 25

<210> 108
<211> 27
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Mutagen

<220>
<221> MOD_RES
<222> (2)
<223> alpha-aminoisobutyric acid

<220>
<221> MOD_RES
<222> (13)
<223> beta-(3-pyridinyl)alanine

<220>
<221> MOD_RES
<222> (25)
<223> beta-(3-pyridinyl)alanine

<220>
<223> this sequence has an amidated c-terminus

<400> 108
His Xaa Glu Gly Thr Phe Thr Ser Asp Val Ala Ser Xaa Leu Glu Ala
1 5 10 15

Ala Ala Ala Lys Ala Phe Ile Ala Xaa Leu Val
20 25

<210> 109
<211> 28
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Mutagen

<220>
<221> MOD_RES
<222> (13)
<223> beta-(3-pyridinyl)alanine

<220>
<221> MOD_RES
<222> (25)
<223> beta-(3-pyridinyl)alanine

<220>
<221> MOD_RES
<222> (28)
<223> gamma-aminobutyric acid

<220>
<223> this sequence has an amidated c-terminus

<400> 109
His Ala Glu Gly Thr Phe Thr Ser Asp Val Ala Ala Xaa Leu Glu Gly
1 5 10 15

Ala Ala Ala Lys Ala Phe Ile Ala Xaa Leu Val Xaa
20 25

<210> 110
<211> 28
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Mutagen

<220>
<221> MOD_RES
<222> (13)
<223> beta-(3-pyridinyl)alanine

<220>
<221> MOD_RES
<222> (25)
<223> beta-(3-pyridinyl)alanine

<220>

<221> MOD_RES

<222> (27)

<223> tert-butylglycine

<220>

<221> MOD_RES

<222> (28)

<223> gamma-aminobutyric acid

<220>

<223> this sequence has an amidated c-terminus

<400> 110

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ala Ser Xaa Leu Glu Gly
1 5 10 15

Ala Ala Ala Lys Ala Phe Ile Ala Xaa Leu Xaa Xaa
20 25

<210> 111

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Mutagen

<220>

<221> MOD_RES

<222> (10)

<223> tert-butylglycine

<220>

<221> MOD_RES

<222> (13)

<223> beta-(3-pyridinyl)alanine

<220>

<221> MOD_RES

<222> (25)

<223> beta-(3-pyridinyl)alanine

<220>

<221> MOD_RES

<222> (28)

<223> gamma-aminobutyric acid

<220>

<223> this sequence has an amidated c-terminus

<400> 111

His Ala Glu Gly Thr Phe Thr Ser Asp Xaa Ala Ser Xaa Leu Glu Gly
1 5 10 15

Ala Ala Ala Lys Ala Phe Ile Ala Xaa Leu Val Xaa
20 25

<210> 112
<211> 27
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Mutagen

<220>
<221> MOD_RES
<222> (2)
<223> alpha-aminoisobutyric acid

<220>
<221> MOD_RES
<222> (13)
<223> beta-(3-pyridinyl)alanine

<220>
<221> MOD_RES
<222> (25)
<223> beta-(3-pyridinyl)alanine

<220>
<223> this sequence has an amidated c-terminus

<400> 112
His Xaa Glu Gly Thr Phe Thr Ser Asp Val Ala Ala Xaa Leu Glu Ala
1 5 10 15

Ala Ala Ala Lys Ala Phe Ile Ala Xaa Leu Val
20 25

<210> 113
<211> 28
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Mutagen

<220>
<221> MOD_RES
<222> (10)
<223> tert-butylglycine

<220>
<221> MOD_RES
<222> (13)
<223> beta-(3-pyridinyl)alanine

<220>
<221> MOD_RES
<222> (14)

<223> tert-butylglycine

<220>
<221> MOD_RES
<222> (25)
<223> beta-(3-pyridinyl)alanine

<220>
<221> MOD_RES
<222> (28)
<223> gamma-aminobutyric acid

<220>
<223> this sequence has an amidated c-terminus

<400> 113
His Ala Glu Gly Thr Phe Thr Ser Asp Xaa Ala Ala Xaa Xaa Glu Ala
1 5 10 15

Ala Ala Ala Lys Ala Phe Ile Ala Xaa Leu Val Xaa
20 25

<210> 114
<211> 30
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Mutagen

<220>
<221> MOD_RES
<222> (2)
<223> alpha-aminoisobutyric acid

<220>
<221> MOD_RES
<222> (26)
<223> 1-amino-1-cyclohexanecarboxylic acid

<220>
<223> this sequence has an amidated c-terminus

<400> 114
His Xaa Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Xaa Val Lys Gly Arg
20 25 30

<210> 115
<211> 30
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Mutagen

<220>
<221> MOD_RES
<222> (14)
<223> 1-amino-1-cyclohexanecarboxylic acid

<220>
<221> MOD_RES
<222> (26)
<223> 1-amino-1-cyclohexanecarboxylic acid

<220>
<223> this sequence has an amidated c-terminus

<400> 115
His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Xaa Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Xaa Val Lys Gly Arg
20 25 30

<210> 116
<211> 30
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Mutagen

<220>
<221> MOD_RES
<222> (2)
<223> alpha-aminoisobutyric acid

<220>
<223> this sequence has an amidated c-terminus

<400> 116
His Xaa Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
20 25 30

<210> 117
<211> 30
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Mutagen

<220>

<221> MOD_RES
<222> (1)
<223> N,N-tetramethylamidinohistidine

<220>
<223> this sequence has an amidated c-terminus

<400> 117
Xaa Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
20 25 30

<210> 118
<211> 29
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Mutagen

<220>
<221> MOD_RES
<222> (1)
<223> 1-amino-1-cyclohexanecarboxylic acid

<220>
<223> this sequence has an amidated c-terminus

<400> 118
Xaa Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly Gln
1 5 10 15

Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
20 25

<210> 119
<211> 30
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Mutagen

<220>
<221> MOD_RES
<222> (2)
<223> 1-amino-1-cyclohexanecarboxylic acid

<220>
<223> this sequence has an amidated c-terminus

<400> 119
His Xaa Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly

1

5

10

15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
20 25 30

<210> 120

<211> 30

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Mutagen

<220>

<221> MOD_RES

<222> (10)

<223> 1-amino-1-cyclohexanecarboxylic acid

<220>

<221> MOD_RES

<222> (14)

<223> 1-amino-1-cyclohexanecarboxylic acid

<220>

<223> this sequence has an amidated c-terminus

<400> 120

His Ala Glu Gly Thr Phe Thr Ser Asp Xaa Ser Ser Tyr Xaa Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
20 25 30

<210> 121

<211> 30

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Mutagen

<220>

<221> MOD_RES

<222> (23)

<223> 1-amino-1-cyclohexanecarboxylic acid

<220>

<221> MOD_RES

<222> (26)

<223> 1-amino-1-cyclohexanecarboxylic acid

<220>

<223> this sequence has an amidated c-terminus

<400> 121

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 . 5 10 15

Gln' Ala Ala Lys Glu Phe Xaa Ala Trp Xaa Val Lys Gly Arg
20 25 30

<210> 122
<211> 30
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Mutagen

<220>
<221> MOD_RES
<222> (14)
<223> 1-amino-1-cyclohexanecarboxylic acid

<220>
<221> MOD_RES
<222> (18)
<223> alpha-aminoisobutyric acid

<220>
<223> this sequence has an amidated c-terminus

<400> 122
His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Xaa Glu Gly
1 . 5 10 15

Gln Xaa Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
20 25 30

<210> 123
<211> 30
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Mutagen

<220>
<221> MOD_RES
<222> (18)
<223> alpha-aminoisobutyric acid

<220>
<221> MOD_RES
<222> (23)
<223> 1-amino-1-cyclohexanecarboxylic acid

<220>
<221> MOD_RES
<222> (26)

<223> 1-amino-1-cyclohexanecarboxylic acid

<220>

<223> this sequence has an amidated c-terminus

<400> 123

His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Xaa Ala Lys Glu Phe Xaa Ala Trp Xaa Val Lys Gly Arg
20 25 30

<210> 124

<211> 30

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Mutagen

<220>

<221> MOD_RES

<222> (10))

<223> 1-amino-1-cyclohexanecarboxylic acid

<220>

<221> MOD_RES

<222> (23)

<223> 1-amino-1-cyclohexanecarboxylic acid

<220>

<221> MOD_RES

<222> (26)

<223> 1-amino-1-cyclohexanecarboxylic acid

<220>

<223> this sequence has an amidated c-terminus

<400> 124

His Ala Glu Gly Thr Phe Thr Ser Asp Xaa Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Xaa Ala Trp Xaa Val Lys Gly Arg
20 25 30

<210> 125

<211> 30

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Mutagen

<220>

<221> MOD_RES

<222> (1)
<223> urocanic acid

<220>
<223> this sequence has an amidated c-terminus

<400> 125
Xaa Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15
Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
20 25 30

<210> 126
<211> 30
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Mutagen

<220>
<221> MOD_RES
<222> (1)
<223> trans-3-(3-pyridyl)acrylic acid

<220>
<223> this sequence has an amidated c-terminus

<400> 126
Xaa Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15
Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
20 25 30

<210> 127
<211> 30
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Mutagen

<220>
<221> MOD_RES
<222> (1)
<223> (4-pyridylthio)acetic acid

<220>
<223> this sequence has an amidated c-terminus

<400> 127
Xaa Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
20 25 30

<210> 128

<211> 30

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Mutagen

<220>

<221> MOD_RES

<222> (2)

<223> N-methylalanine

<220>

<223> this sequence has an amidated c-terminus

<400> 128

His Xaa Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
20 25 30

<210> 129

<211> 30

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Mutagen

<220>

<221> MOD_RES

<222> (2)

<223> N-methylglycine

<220>

<223> this sequence has an amidated c-terminus

<400> 129

His Xaa Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
20 25 30

<210> 130

<211> 30

<212> PRT

<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Mutagen

<220>
<221> MOD_RES
<222> (2)
<223> 1-amino-1-cyclopentanecarboxylic acid

<400> 130
His Xaa Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
20 25 30

<210> 131
<211> 30
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Mutagen

<220>
<221> MOD_RES
<222> (3)
<223> N-methylglutamic acid

<220>
<223> this sequence has an amidated c-terminus

<400> 131
His Ala Xaa Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
20 25 30

<210> 132
<211> 30
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Mutagen

<220>
<221> MOD_RES
<222> (2)
<223> 1-amino-1-cyclopentanecarboxylic acid

<220>
<221> MOD_RES
<222> (14)

<223> 1-amino-1-cyclohexanecarboxylic acid

<220>

<221> MOD_RES

<222> (26)

<223> 1-amino-1-cyclohexanecarboxylic acid

<220>

<223> this sequence has an amidated c-terminus

<400> 132

His Xaa Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Xaa Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Xaa Val Lys Gly Arg
20 25 30

<210> 133

<211> 30

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Mutagen

<220>

<221> MOD_RES

<222> (2)

<223> alpha-aminoisobutyric acid

<220>

<221> MOD_RES

<222> (26)

<223> 1-amino-1-cyclohexanecarboxylic acid

<220>

<223> this sequence has an amidated c-terminus

<400> 133

His Xaa Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Xaa Val Lys Gly Arg
20 25 30

<210> 134

<211> 30

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Mutagen

<220>

<221> MOD_RES

<222> (2)
<223> alpha-aminoisobutyric acid

<220>
<221> MOD_RES
<222> (19)
<223> alpha-aminoisobutyric acid

<220>
<223> this sequence has an amidated c-terminus

<400> 134
His Xaa Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15
Gln Ala Xaa Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
20 25 30

<210> 135
<211> 30
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Mutagen

<220>
<221> MOD_RES
<222> (2)
<223> alpha-aminoisobutyric acid

<220>
<221> MOD_RES
<222> (18)
<223> alpha-aminoisobutyric acid

<220>
<223> this sequence has an amidated c-terminus

<400> 135
His Xaa Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15
Gln Xaa Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
20 25 30

<210> 136
<211> 30
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Mutagen

<220>

<221> MOD_RES

<222> (2)

<223> alpha-aminoisobutyric acid

<220>

<221> MOD_RES

<222> (24)

<223> alpha-aminoisobutyric acid

<220>

<223> this sequence has an amidated c-terminus

<400> 136

His Xaa Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Xaa Trp Leu Val Lys Gly Arg
20 25 30

<210> 137

<211> 30

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Mutagen

<220>

<221> MOD_RES

<222> (2)

<223> alpha-aminoisobutyric acid

<220>

<221> MOD_RES

<222> (14)

<223> cyclohexylalanine

<220>

<223> this sequence has an amidated c-terminus

<400> 137

His Xaa Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Xaa Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
20 25 30

<210> 138

<211> 30

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Mutagen

<220>
<221> MOD_RES
<222> (2)
<223> alpha-aminoisobutyric acid

<220>
<221> MOD_RES
<222> (26)
<223> cyclohexylalanine

<220>
<223> this sequence has an amidated c-terminus

<400> 138
His Xaa Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15
Gln Ala Ala Lys Glu Phe Ile Ala Trp Xaa Val Lys Gly Arg
20 25 30

<210> 139
<211> 30
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Mutagen

<220>
<221> MOD_RES
<222> (2)
<223> alpha-aminoisobutyric acid

<220>
<223> this sequence has an amidated c-terminus

<400> 139
His Xaa Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15
Glu Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
20 25 30

<210> 140
<211> 30
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Mutagen

<220>
<221> MOD_RES
<222> (2)
<223> alpha-aminoisobutyric acid

<220>
<221> MOD_RES
<222> (14)
<223> 1-amino-1-cyclohexanecarboxylic acid

<220>
<223> this sequence has an amidated c-terminus

<400> 140
His Xaa Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Xaa Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
20 25 30

<210> 141
<211> 30
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Mutagen

<220>
<221> MOD_RES
<222> (2)
<223> alpha-aminoisobutyric acid

<220>
<221> MOD_RES
<222> (14)
<223> 1-amino-1-cyclohexanecarboxylic acid

<220>
<221> MOD_RES
<222> (26)
<223> 1-amino-1-cyclohexanecarboxylic acid

<220>
<223> this sequence has an amidated c-terminus

<400> 141
His Xaa Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Xaa Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Xaa Val Lys Gly Arg
20 25 30

<210> 142
<211> 30
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Mutagen

<220>
<221> MOD_RES
<222> (2)
<223> alpha-aminoisobutyric acid

<220>
<221> MOD_RES
<222> (16)
<223> alpha-aminoisobutyric acid

<220>
<223> this sequence has an amidated c-terminus

<400> 142
His Xaa Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Xaa
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
20 25 30

<210> 143
<211> 30
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Mutagen

<220>
<221> MOD_RES
<222> (2)
<223> alpha-aminoisobutyric acid

<220>
<221> MOD_RES
<222> (16)
<223> beta alanine

<220>
<223> this sequence has an amidated c-terminus

<400> 143
His Xaa Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Xaa
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
20 25 30

<210> 144
<211> 30
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Mutagen

<220>
<221> MOD_RES
<222> (2)
<223> alpha-aminoisobutyric acid

<220>
<223> this sequence has an amidated c-terminus

<400> 144
His Xaa Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Lys Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
20 25 30

<210> 145
<211> 30
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Mutagen

<220>
<221> MOD_RES
<222> (2)
<223> alpha-aminoisobutyric acid

<220>
<221> MOD_RES
<222> (6)
<223> 1-amino-1-cyclohexanecarboxylic acid

<220>
<223> this sequence has an amidated c-terminus

<400> 145
His Xaa Glu Gly Thr Xaa Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
20 25 30

<210> 146
<211> 30
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Mutagen

<220>

<221> MOD_RES
<222> (2)
<223> alpha-aminoisobutyric acid

<220>
<221> MOD_RES
<222> (23)
<223> 1-amino-1-cyclohexanecarboxylic acid

<220>
<223> this sequence has an amidated c-terminus

<400> 146
His Xaa Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Xaa Ala Trp Leu Val Lys Gly Arg
20 25 30

<210> 147
<211> 30
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Mutagen

<220>
<221> MOD_RES
<222> (2)
<223> alpha-aminoisobutyric acid

<220>
<221> MOD_RES
<222> (27)
<223> 1-amino-1-cyclohexanecarboxylic acid

<220>
<223> this sequence has an amidated c-terminus

<400> 147
His Xaa Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Xaa Lys Gly Arg
20 25 30

<210> 148
<211> 30
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Mutagen

<220>
<221> MOD_RES
<222> (2)
<223> alpha-aminoisobutyric acid

<220>
<221> MOD_RES
<222> (8)
<223> alpha-aminoisobutyric acid

<220>
<223> this sequence has an amidated c-terminus

<400> 148
His Xaa Glu Gly Thr Phe Thr Xaa Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15
Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
20 25 30

|
<210> 149
<211> 30
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Mutagen

<220>
<221> MOD_RES
<222> (2)
<223> alpha-aminoisobutyric acid

<220>
<221> MOD_RES
<222> (12)
<223> alpha-aminoisobutyric acid

<220>
<223> this sequence has an amidated c-terminus

<400> 149
His Xaa Glu Gly Thr Phe Thr Ser Asp Val Ser Xaa Tyr Leu Glu Gly
1 5 10 15
Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
20 25 30

<210> 150
<211> 30
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Mutagen

<220>
<221> MOD_RES
<222> (2)
<223> alpha-aminoisobutyric acid

<220>
<221> MOD_RES
<222> (11)
<223> alpha-aminoisobutyric acid

<220>
<223> this sequence has an amidated c-terminus

<400> 150
His Xaa Glu Gly Thr Phe Thr Ser Asp Val Xaa Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
20 25 30

<210> 151
<211> 30
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Mutagen

<220>
<221> MOD_RES
<222> (13)
<223> [125I]-3-iodotyrosine

<400> 151
His Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Xaa Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
20 25 30

<210> 152
<211> 30
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Mutagen

<220>
<221> MUTAGEN
<222> (1)...(1)
<223> N-alpha-(4-(2-hydroxyethyl)-1-piperazine-ethanesulfonyl)-histidine

<220>
<223> this sequence has an amidated c-terminus

<400> 152
Xaa Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
20 25 30

<210> 153
<211> 30
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Mutagen

<220>
<221> MOD_RES
<222> (1)
<223> N-alpha-(4-(2-hydroxyethyl)-1-piperazineacetyl)
-histidine

<220>
<223> this sequence has an amidated c-terminus

<400> 153
Xaa Ala Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Arg
20 25 30

<210> 154
<211> 30
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Mutagen

<220>
<221> MOD_RES
<222> (2)
<223> alpha-aminoisobutyric acid

<220>
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<222> (27)
<223> 1-amino-1-cyclopentancarboxylic acid

<220>
<223> this sequence has an amidated c-terminus

<400> 154
His Xaa Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Xaa Lys Gly Arg
20 25 30

<210> 155

<211> 30

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Mutagen

<220>

<221> MOD_RES

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<222> (26)

<223> 1-amino-1-cyclohexanecarboxylic acid

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<221> MOD_RES

<222> (30)

<223> N-epsilon-tetradecanoyl-lysine

<220>

<223> this sequence has an amidated c-terminus

<400> 155

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1 5 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Xaa Val Lys Gly Xaa
20 25 30

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<220>
<223> this sequence has an amidated c-terminus

<400> 156
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1 5 10 15

Gln Ala Ala Arg Glu Phe Ile Ala Trp Xaa Val Arg Gly Xaa
20 25 30

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<220>
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<400> 157
His Xaa Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Arg Glu Phe Ile Ala Trp Xaa Val Xaa Gly Arg
20 25 30

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<220>

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<223> 1-amino-1-cyclohexanecarboxylic acid

<220>

<223> this sequence has an amidated c-terminus

<400> 158

His Xaa Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 . 10 15

Gln Ala Ala Xaa Glu Phe Ile Ala Trp Xaa Val Arg Gly Arg
20 25 30

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<220>

<223> Description of Artificial Sequence: Mutagen

<220>

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<223> N-epsilon-octanoyl-lysine

<220>

<223> this sequence has an amidated c-terminus

<400> 159

His Xaa Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 . 10 15

Gln Ala Ala Lys Glu Phe Ile Ala Trp Leu Val Lys Gly Xaa

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<223> 1-amino-1-cyclohexanecarboxylic acid

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<220>

<223> this sequence has an amidated c-terminus

<400> 160

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<400> 161
His Xaa Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Arg Glu Phe Ile Ala Trp Xaa Val Arg Gly Xaa
20 25 30

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<400> 162
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1 5 10 15

Gln Ala Ala Arg Glu Phe Ile Ala Trp Xaa Val Xaa Gly Arg
20 25 30

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<223> 1-amino-1-cyclohexanecarboxylic acid

<400> 163
His Xaa Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Xaa Glu Phe Ile Ala Trp Xaa Val Arg Gly Arg
20 25 30

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<400> 164
His Xaa Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15

Gln Ala Ala Arg Glu Phe Ile Ala Trp Xaa Val Arg Gly Xaa Gly
20 25 30

<210> 165
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<220>
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<400> 165
His Xaa Glu Gly Thr Phe Thr Ser Asp Val Ser Ser Tyr Leu Glu Gly
1 5 10 15
Gln Ala Ala Arg Glu Phe Ile Ala Trp Xaa Val Xaa Gly Arg Gly
20 25 30